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David John Steeves

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EXAMINER

KRISHNAN, VIVEK V

ART UNIT

PAPER NUMBER

2145

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/792,254	<b>Applicant(s)</b> STEEVES, DAVID JOHN	
	<b>Examiner</b> VIVEK KRISHNAN	<b>Art Unit</b> 2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This action is responsive to the Amendment/Arguments filed on March 17, 2008. Claims 1-31 are pending.

#### ***Response to Arguments***

1. Regarding interview summary cited in the remarks filed on March 17, 2008, please refer to the Examiner Interview Summary Record of the telephonic interview for a summary of the content of the interview.
2. Applicant's arguments with respect to the objection to the title of the invention have been fully considered and are persuasive. The objection to the title of the invention has been withdrawn.
3. Applicant's arguments with respect to the objection to the disclosure due to informalities have been fully considered and are persuasive. The objection to the disclosure due to informalities has been withdrawn.
4. Applicant's arguments with respect to Claim Objections due to informalities have been fully considered and are persuasive. The Claim Objections due to informalities have been withdrawn.
5. Applicant's arguments with respect to Claim Rejections under 35 U.S.C. 102 and 35 U.S.C. 103 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warhol Worms: The Potential for Very Fast Internet Plagues published on February 13, 2002 by Weaver (denoted herein as "Weaver") and in further view of Simulating and Optimizing Worm Propagation Algorithms published on September 29, 2003 by Vogt (denoted herein as "Vogt").

8. As to Claims 1, 9, and 17, Weaver discloses a method, system, and computer readable medium bearing computer readable instructions (referenced hereinafter as the method) for propagating data over a network, comprising:

determining a sequential first set of network addresses (Weaver; New Infection Strategies, discloses determining a sequential first set of network addresses; i.e. the IP address space);

mapping a range of addresses in the sequential first set of network addresses to a second set of addresses wherein the second set of addresses is a one to one mapping of the address from the first set and wherein the addresses in the second set are not in increasing address order (Weaver; New Infection Strategies, discloses a one to one mapping of the first set of addresses to

a second set of addresses by generating a permutation of the first set of addresses) (see also Laplante – Dictionary of Computer Science Engineering and Technology; for a definition of permutation as a rearrangement of elements where none are lost, added, or changed, in this case, a rearrangement of the IP address space);

traversing the second set of addresses to find another element of the network (Weaver; Active Worms, Existing Infection Strategies, and New Infection Strategies, discloses a permutation scan where the permutation, or second set, of addresses is traversed to find another element of the network);

transferring the data to the another element of the network along with an indication of at least a portion of the addresses remaining in the second set [...] (Weaver; New Infection Strategies, discloses transferring the data and a portion of the addresses remaining in the second set to another element of the network).

Weaver does not explicitly disclose, however Vogt discloses transferring the data to the another element of the network along with an indication of at least a portion of the addresses remaining in the second set by specifying a range of addresses in the second set of addresses (Vogt; 4.4 Subdividing, transferring data to another element of the network with an indication of a portion of addresses by specifying a range of addresses) (see also Weaver; New Infection Strategies, partitioned permutation scan where a range of addresses in the permutation are transferred to another element).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify, transferring data to another element, as disclosed by Weaver, to include transferring the data by specifying a range of addresses, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been motivated to make this combination in order to provide faster propagation of software over an address space (Vogt; 4.4 Subdividing).

9. As to Claims 2, 10, and 18, Weaver and Vogt in combination disclose each and every limitation of Claims 1, 9, and 17. Weaver further discloses the mapping is a function based on a primitive element (Weaver; New Infection Strategies, discloses the permutation is based on a preselected key).

10. As to Claims 3, 11, and 19, Weaver and Vogt in combination disclose each and every limitation of Claims 1, 9, and 17. Vogt further discloses traversing the second set of addresses to find a second element of the computer network and transferring the data to the second element of the computer network and an indication of at least a second portion of the addresses remaining in the second set that have not been traversed (Vogt; 4.4 Subdividing, discloses traversing a set of addresses to find a second element of the computer network and transferring the data to the second element with an indication of a second portion of the addresses remaining in the set that have not been traversed).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify, traversing a set of addresses to find an element and transferring to the element data with an indication of a portion of addresses in the set, as disclosed by Weaver, to include finding and transferring data with a second portion of addresses remaining in the set that have not been traversed to another element, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been motivated to make this combination in order to provide a more efficient method of propagating software over an address space (Vogt; 4.4 Subdividing).

11. As to Claims 4, 12, and 20, Weaver and Vogt in combination disclose each and every limitation of Claims 1, 9, and 17. Weaver further discloses the indication of the at least a portion of the addresses remaining comprises a function used to perform that mapping (Weaver; New Infection Strategies, discloses the indication includes the permutation scan algorithm applied by each worm).

12. As to Claims 5, 13, and 21, Weaver and Vogt in combination disclose each and every limitation of Claims 1, 9, and 17. Weaver further discloses the network comprises Internet Protocol addresses (Weaver; New Infection Strategies, discloses the network comprising IP addresses).

13. As to Claims 6, 14, and 22, Weaver and Vogt in combination disclose each and every limitation of Claims 5, 13, and 21. Weaver further discloses the network is coupled to the Internet (Weaver; New Infection Strategies, discloses the network is coupled to the Internet).

14. As to Claims 7, 15, and 23, Weaver and Vogt in combination disclose each and every limitation of Claims 5, 13, and 21. Weaver further discloses the network comprises a subnet (Weaver; New Infection Strategies, discloses the network comprises a subnet).

15. As to Claims 8, 16, and 24, Weaver and Vogt in combination disclose each and every limitation of Claims 1, 9, and 17. Weaver further discloses the element of the computer network comprises a computing device (Weaver; New Infection Strategies, discloses the element of the network is a computing device).

16. As to Claim 25, Weaver discloses:

(a) determining a sequential first set of network addresses (Weaver; New Infection Strategies, discloses determining a sequential first set of network addresses; i.e. the IP address space));

(b) mapping a range of addresses in the sequential first set of network addresses to a second set of addresses wherein the second set of addresses is a one to one mapping of the range of addresses in the first set and wherein the addresses in the second set are not in increasing address order (Weaver; New Infection Strategies, discloses a one to one mapping of the first set of addresses to a second set of addresses by generating a permutation of the first set of addresses) (see also Laplante – Dictionary of Computer Science Engineering and Technology; for a definition of permutation as a rearrangement of elements where none are lost, added, or changed, in this case, a rearrangement of the IP address space);

Weaver does not explicitly disclose, however Vogt discloses:

(c) traversing the second set of addresses to locate at least two other elements of the network (Vogt; 4.4 Subdividing, discloses traversing a set of addresses to locate two elements of a network);



(d) transferring a set of computer readable instructions to the at least two other elements of the network to carry out a distributed computing function (Vogt; 4.4 Subdividing, discloses transferring the worm and propagation algorithm to at least two other elements of the network) (see also Weaver; Abstract and New Infection Strategies, discloses the worm, which comprises self executing instructions, propagating through address space by transferring copies of itself to other elements of the network); and

(e) transferring an indication of at least a portion of the addresses remaining in the second set by specifying a range of addresses in the second set of addresses along with a set of computer-readable instructions for carrying out acts (a) through (d) to the at least two other elements (Vogt; 4.4 Subdividing, discloses transferring, to the two elements, the worm along with an indication of a portion of addresses remaining in the second set by specifying a range of addresses, in this case, half the address space) (see also Weaver; Abstract and New Infection Strategies, discloses the worm, which comprises self executing instructions, propagating through address space by transferring copies of itself to other elements of the network with an indication of a portion of addresses remaining in the permutation, or second set, of addresses).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify determining and mapping, as disclosed by Weaver, to include traversing and transferring to at least two other element, as disclosed by Vogt.

One of ordinary skill in the art at the time the invention was made would have been motivated to make this combination in order to provide faster propagation of software over an address space (Vogt; 4.4 Subdividing).

17. As to Claim 26, Weaver and Vogt in combination disclose each and every limitation of Claim 25. Weaver further discloses the mapping is a function based on a primitive element (Weaver; New Infection Strategies, discloses the permutation is based on a preselected key).

18. As to Claim 27, Weaver and Vogt in combination disclose each and every limitation of Claim 25. Weaver further discloses the indication of the at least a portion of the addresses remaining comprises a function used to perform that mapping (Weaver; New Infection Strategies, discloses the indication includes the permutation scan algorithm applied by each worm).

19. As to Claim 28, Weaver and Vogt in combination disclose each and every limitation of Claim 25. Weaver further discloses the network comprises Internet Protocol addresses (Weaver; New Infection Strategies, discloses the network comprising IP addresses).

20. As to Claim 29, Weaver and Vogt in combination disclose each and every limitation of Claim 26. Weaver further discloses the network is coupled to the Internet (Weaver; New Infection Strategies, discloses the network is coupled to the Internet).

21. As to Claim 30, Weaver and Vogt in combination disclose each and every limitation of Claim 26. Weaver further discloses the network comprises a subnet (Weaver; New Infection Strategies, discloses the network comprises a subnet).

22. As to Claim 31, Weaver and Vogt in combination disclose each and every limitation of Claim 25. Weaver further discloses the element of the computer network comprises a computing device (Weaver; New Infection Strategies, discloses the element of the network is a computing device).

### *Conclusion*

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VIVEK KRISHNAN whose telephone number is (571) 270-5009. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on (571) 272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VK

/Jason D Cardone/  
Supervisory Patent Examiner, Art Unit 2145